TC3-RELATED GLOSSARY OF TECHNOLOGY TERMS

FEBRUARY 16, 2015

MEMBERS OF THE COMMITTEE FOR TECHNOLOGY INITIATIVES

Chris Peoples – Chair (NCDOT)

Phil Broessel – Co-Chair (MDOT)

Kevin Monaghan – Secretary (HEi)

Robert Lutz (AMRL)

Tom Elliot (NHI)

INSTRUCTION SYSTEM DESIGN TERMS

Blended: Courses that combine two or three delivery methods (instructor-led, web-based, web-conference, and other). The advantage to a blended approach is that content can be delivered in the most efficient and effective delivery format for the specific content, maximizing time and resources. A blended approach is extremely flexible, and can accommodate a diverse target audience. For example, by beginning a course with an introductory WBT followed by exercises in a self-study guide, learners with varying skill and experience levels could all prepare to come together in an ILT setting and start from a more level playing field.

Design Implications: The training design and strategies that are to be employed for a particular training event. These designs can impact the delivery method and instructional approach.

Environment Context: The relationship between the training environment and the performance environment influences how well knowledge transfers from the controlled learning environment, and influences the learner's ability to apply the new skills or knowledge in the real world.

Instructionally Sound: The nature of the content is inextricably tied to the learning outcomes and strongly influences the requirements of the training design. Depending on the technical content, hands-on practice may be required, discussion may be needed, and interactive experience may be necessary for the training to be effective.

Instructor-Led Training (ILT): Training is delivered face-to-face by an instructor. This method of delivery can be highly engaging and interactive, allowing for the highest level of participation possible, as it allows instructor and participants to engage in a real-time learning environment, facilitate question and answer sessions, and participate in a wide variety of learning activities including case studies, role-playing, and scenario-based tabletop exercises.

ILT can effectively address any type of learning outcome, but is especially advantageous when learning outcomes are in the affective or psychomotor domain, or are in the cognitive domain and require high order thinking or skills. ILT is most effective when: developing interpersonal skills, hands-on practice is required, discussion is needed, or interactive experience is integral to learning. ILT benefits learners when: it's important for people to get to know each other, participants have similar skill levels but varied experiences, and participants can learn from each other's experiences and build their professional network. It may be possible to build the ILT environment or conduct the training in

a location that emulates the performance environment. ILT can easily employ strategies that allow learners to mirror their performance environment and help information transfer and assimilation. ILT can accommodate the largest range of training design strategies. Given any required equipment or resources, ILT can accommodate virtually any training strategy used.

Learning Outcomes: A product of the needs assessment is the specification of the learning outcomes that, in turn, identifies or specifies the skills and tasks to be trained. Objectives can be categorized into three broad categories: cognitive, affective, and psychomotor.

Level of Interactivity/Participation: The level of interactivity or participation refers to the general amount of engagement a training contains. The nature of the content and learning outcomes will, in some respects, dictate the optimal level of interactivity or learner participation desired. Different methods and approaches have different capabilities for interactivity and participation. Training can be defined by levels: Level I – Passive or No Interaction/Participation; Level II – Limited Interactivity/Participation; and Level III – Complex or Highly Engaging Interactivity/Participation.

Mobile Learning: Mobile learning can be defined in both a technological sense and a learner sense, and both parts of the definition are important. Technically, mobile learning is any learning activity that occurs through the use of a compact, digital, portable device that the learner carries on a regular basis, has reliable connectivity, and fits into a pocket or purse. From a learner standpoint, mobile learning is when the learning experience happens out and about in the world through mobile device or communication. Mobile learning can be designed at any interactivity level; it is flexible and dependent on the nature of the content. Content that is well-suited for mobile delivery focuses on content availability and mobile collaboration.

With mobile training, the course content is accessible away from the office or computer, freeing the learner to engage with the content on demand. The target audience will ideally have a high comfort level using a mobile device, most commonly smart phones or tablets. In order for this training to be easily distributed, the target audience must have access to these devices and be proficient with their use and basic interface. The training environment will likely not resemble the performance environment. Course design must consider small screen interface, touch screen capabilities, compliant formats, size and run restrictions, and compatibility or integration concerns.

Reference Materials and Self-Study Guides: Reference materials or self-study guides are teaching devices intended to be self-explanatory and self-instructional; a formalized set of textual and/or graphical step-by-step directions for accomplishing a task through one or more techniques. These materials are designed to be used either electronically (likely a PDF or equivalent format) or as print material. Reference materials and self-study guides are not interactive, and are designed at Interactivity Level I – Passive or No Interaction/Participation.

Reference materials and self-study guides most effectively address learning outcomes in the cognitive domain. These materials or guides can function as a job aid, where the content is procedural, step-based, linear, and designed to be a support tool for learners while they accomplish a task. The target audience must be self-motivated learners who can systematically follow clear instructions to accomplish a task uniformly. It is also beneficial if learners have additional forms of support either on-the-job or in a coach or mentor role. By their nature, reference materials or self-study guides do not emulate the performance environment, but rather provide a narrative guide to a task to be completed in that environment. Simple graphics or pictures may be used to represent the performance environment and tie content to the real world. When designing reference material or a self-study guide, context must be provided to support learners whenever possible. Materials or guides may contain graphics, scenarios, annotated case studies, procedural documentation, screen shots, detailed charts, graphs, and pictures. If designed to be used electronically, the materials could be made interactive (for example, selectable areas of content or an interactive table of contents); however, these features would be lost if the materials are printed. As applicable, reference materials and self-study guides should be designed to accommodate printing.

Target Audience: The target audience defines the characteristics, role, responsibilities, and other salient facts about the participant for whom the training is designed. The needs of the target audience play an important role in deciding on the most effective delivery method and approach. A target audience's characteristics typically inform the way that knowledge is most successfully transferred or assimilated to that learner. Learner's traits dictate the environment that will be most beneficial, as well as the types of learning strategies and activities that will have the greatest and most lasting impact.

Video Conference Training (VCT): Video conference training usually conveys live instruction via a telecommunication facility. VCTs are either point-to-point (one site to another) or multi-point (many sites and a host site). Besides the audio and visual transmission of meeting activities, videoconferencing technologies can be used to share documents and display information on whiteboards.

VCTs can address learning outcomes in the cognitive (most commonly), affective, or psychomotor domain. An instructor who is well-versed in VCT and comfortable with the technology and flow of this type of course is required to deliver content. Content and instructional activities can be delivered with a coordinated effort. They are typically easiest to coordinate when learners at a discrete site interact with each other, and then return to the full class to debrief the exercise, led by the instructor. The target audience is geographically dispersed in groups. The focus of this delivery method or approach is on serving multiple locations instead of a focus on individuals. In rare instances a VCT can emulate the learner's performance environment, but likely will not. The course design must be compliant with video

technology tools and capabilities. Learning strategies can be designed either for a site to complete or to be conducted and coordinated across sites. VCTs have features that aid in this coordinated effort, including voice-activated switching and multi-screen capabilities to view the presentation and presenter, or to view directions for an activity and the site that is currently reporting out or debriefing the exercise.

Web-Based Training (WBT): A WBT is located online and can be accessed from any computer with an Internet connection. WBTs are self-paced and are not led by an instructor. Instead, they are designed for individual training and reference. Users can access a WBT at any time and return to it as many times as designated, although typically a Level 2 assessment can only be completed once.

WBTs most effectively address learning outcomes in the cognitive domain, where learners are acquiring knowledge, and are not as effective when learners are to have a growth in feelings or emotional areas (attitudes), or manual or physical skills. WBTs are optimal for learning software and viewing software demonstrations, and with content that is somewhat linear or has a logical flow. WBTs can be used to present videos or graphics. When learners need to be able to traverse the course at their own pace and access the content on demand, this is the ideal delivery method or approach. However, the performance environment of the learners is typically very different than the learning environment, with the exception of software training, which can effectively emulate the learning environment.

Web-Conference Training (WCT): A WCT session has an instructor or facilitator and takes place online in a virtual classroom or via web-conference software. A WCT can be accessed from any computer with an Internet connection. These courses are live events, scheduled to occur at a specific time. A well-planned, creatively-executed WCT can have a high level of participation (Level III), however most WCTs are designed at Level II, as participation is limited by the tools provided in the virtual classroom.

WCTs work well with audiences that are able to network or get to know one another virtually, and who are comfortable in a virtual classroom environment. WCTs typically do not emulate the learner's performance environment, although some activities may be provided that help to bridge this gap. The design of the course is somewhat constrained in that is must utilize the tools/technology available in the virtual classroom. Examples of supported learning activities include white boards, chat activities, question and answer sessions, interactive poll or multiple choice questions, breakout sessions, presentations, downloadable content, additional Web content, and discussion via phone or VOIP technology. Another benefit to WCTs is that they can be recorded for downloading/viewing at a later date.

LMS TERMS

Course Management Systems (CrMSs): CrMSs are most commonly used in higher education rather than enterprise training environments. They are sometimes called Education Learning Management Systems (ELMSs). The primary focus of CrMSs is to manage all aspects of live instructor-led classroom training. They may include the ability to deliver learner-led courses, but these are usually supplementary or ancillary to the instructor-led courses they manage. As described earlier, many LMSs incorporate some level of CrMS functionality and vice versa, since many enterprises want to manage their instructor-led learning and e-learning in one system.

CrMSs are used primarily in the academic community. That is their primary market target. CrMSs are sometimes labeled as LMSs within the user community, but they are distinctly different in the sense that they do not deliver the core learning experiences—those are provided live in classrooms. However, a CrMS vendor that has added e-learning delivery capability may term themselves an LMS (though the preponderance of their functionality really qualifies them as a CrMS).

CrMSs are predicated on the idea that instructors need to use the system to build content, manage their courses, and contact students. LMSs are not usually designed from the ground up for instructor use as a core function. They are generally more optimized for standalone e-learning, with little or no instructor intervention.

Learning Management System (LMS): A learning management system (LMS) is a software application for the administration, documentation, tracking, reporting, and delivery of electronic educational technology (also called e-learning) education courses or training programs.

An LMS is a framework that can handle all aspects of the learning process. It is the infrastructure that has the capability to deliver and manage instructional content, identify and assess individual and organizational learning or training goals, track the progress towards meeting those goals, and collect and present data for supervising the learning process of the organization as a whole. An LMS delivers content but also handles registering for courses, course administration, skills gap analysis, tracking, and reporting.